Homework 4, Stat/Ma 320 Fall 2004

Due Sept. 23

1. Find the probability of getting exactly n heads in $2n$ tosses of a fair coin. Show that this probability decreases as n increase.

2. The number of raisins in a piece of raisin bread is random. Assume the number has a Poisson distribution with $\lambda = 5$. Find the probability that you get (a) exactly 6 raisins in a randomly pick piece of raisin bread. (b) no raisin at all.

3. Suppose 52% American voters support Bush and 48% support Kerry (no third choice). You randomly pick 10 voters for interview. What is the chance that 6 or more favor Kerry?

    Write down an expression for the following probability but no need to calculate the value: the probability that among 100 randomly picked voters there are between 50 and 58 (include 50 and 58) favor Kerry.